



GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

September 22, 2016

Michael B. Toelle
Holcim (U.S.), Inc
6055 East Croydon Road
Morgan, Utah 84050

Subject: Sixth Review of Notice of Intention to Commence Large Mining Operations, Holcim (U.S.) Inc., Devils Slide Quarry, M/029/0001, Morgan County, Utah

Dear Mr. Toelle:

The Division of Oil, Gas and Mining has completed a review of the Notice of Intention to Commence Large Mining Operations (NOI) for the Devil's Slide Mine, which was received July 29, 2016. The attached comments will need to be addressed before tentative approval may be granted.

The comments are listed under the applicable minerals rule heading; please format your response in a similar fashion. Please address those items requested in the attached technical review and submit the NOI as a complete document using redline and strikeout text. After the NOI is determined technically complete and the Division is prepared to issue final approval, you will be asked to submit two complete and clean copies of the NOI. Upon final approval, the Division will stamp both copies approved and return one for your records.

The Division will suspend further review until receiving your response to this letter. Please contact Leslie Heppler at 801-538-5257 or me at 801-538-5261 if you have questions about the review. Thank you for your cooperation in completing this permitting action.

Sincerely,

Paul B. Baker
Minerals Program Manager

PBB: lah: eb

Attachment: Review

cc: Larry Garahana, SL BLM (lgarahana@blm.gov)

P:\GROUPS\MINERALS\WP\M029-Morgan\M0290001-DevilsSlide\final\REV6-7482-09132016.doc



**SIXTH REVIEW OF NOTICE OF INTENTION
TO COMMENCE LARGE MINING OPERATIONS**

Holcim (US) Inc.

Devil's Slide Mine

M/029/0001

September 13, 2016

General Comments

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	General	The Division may have additional comments based on future submittals. Every attempt should be made to submit a complete NOI.	lah	
2		<i>The plan received is incomplete. Both Appendices, Appendix 2, the Chemical and Toxicity Analysis of Kiln Dust, and Appendix 4, Holcim (US) Devils Slide Quarry Interim Drainage Study, were deleted from the NOI.</i> Now missing are Appendices 5 and 6. Appendix 6 is the 2002 Overburden Dump Revision which is not provided at this time. These items are on the Division's web site. Does Holcim intend to provide two clean copies of the entire document prior to approval?	lah lah	
3	Page 6 Para 3	The NOI references "ACT/029/001." Please rewrite to "M/029/0001." In addition, also on page 8 (6.), note the current permit ID as M/029/0001. The cover page notes M/029/001; please change to M/029/0001.	lah	
4	List of Appendices Page 5	On page 5, Appendix 1 is listed as "Final Mine Plan Design..." but Appendix 1 is the list of figures, which also happens to be listed on page 4. Please fix whichever one is in error.	lah	
5	Omission	Appendix 8 was not included in this submission. Can the Division assume the report is the signed and stamped 2013 document?	lah	

R647-4-104 - Operator's, Surface and Mineral Ownership

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
6	Omission	<i>From the Division's June 16, 2011, review - Submit a mineral and surface ownership map and include ownership of adjacent property.</i> <i>Please submit the address for Joseph Toone.</i> According to Morgan County Records the Toone address is Lurene Toone Trust 223 West 2280 North #105 Provo, UT 84604-0000	lah lah	

Page 3 of 11
Michael Toelle
M/029/0001
September 22, 2016

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
7	Pages 8 and 9	Please reference Figure 105.1a under land surface ownership. Please also reference this figure on page 9, number 10.	lah	
8	Page 9	Remove BLM, as the status is none.	lah	

R647-4-105 - Maps, Drawings & Photographs

General Map Comments

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
9	Page 7	Add date of the Google Earth image in the text below and add north arrow adjacent to the photo.	lah	
10	All figures	For future reference, it is engineering standard for the figure or map identification number to be in the lower left hand corning of the drawing. (No action needed).	lah	
11	Figure 1	<i>Previous Comment - Figure 1 is included but not listed in the Appendix. Please list in the appendix and refer to the drawing under appropriate sections, including the surety section.</i> There still is no Figure 1 (which is not really important). As written – “Appendix 1 – Final Mine Plan Design for Quarries 1 and 2”. Which are actually all the figures for the NOI. See comment above. Please remove all reference to figure 1.	lah	
12	Figure 105.1a	Change US Gov to BLM (to be consistent to page 9)	lah	

105.2 - Surface facilities map

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
13	Figure 105.3	<i>Previous comment - Drill holes are shown on the maps but not numbered. The Division needs an accounting of what drill holes need to be plugged and how much it would cost (depth and diameter). Ideally, the plan should include a table that is tied to the figure and the bond calculation.</i> New comment - Page 21 refers to drill holes, with a good description. Please add to the Table of Contents “108 – Hole Plugging.”	lah	
14	Figures 105.2c 105.3b 105.3c	<i>Previous comment 8 - ... Is the “processed waste facility” identified on the figure 105.4d the same as the cement kiln dust storage area? If so, modify the name to be clear.</i> New comment - Not yet addressed. Alternatively, identify of what “Processed Waste” consists in the section 106.2 text.	pnb	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
15	Figure 105.2c 105.3b 105.3c	<i>Previous comment 9 - Show the current and past disposal locations of cement kiln dust on the reclamation treatment map(s), as required by R647.4.110.4.</i> New comment - Historical aerial photos suggest that processed waste and/or cement kiln dust (CKD) has been deposited in a significantly larger area than that shown as green on this map. Correct maps to show both past and future disposal areas, or clarify.	pnb	
16	Figures 105.2a 105.2c 105.3b 105.3c	Historical photos suggest that CKD may be stockpiled both north of the blending facilities on a pad on the hillside, and northwest of the maintenance shop. If so, identify these areas on the maps. Locations of coal and other introduced or produced materials requiring special disposal or removal should also be identified.	pnb	
17	Figure 105.3	<i>Previous comment 21 - Please show the cement kiln fines location as well [on Figure 109.1].</i> Since the original Figure has been removed, identify the Process Waste and/or CKD locations on Hydrology Map A.	pnb	
18	Figure 105.3b	Contours suggest that mining will intercept the Processed Waste Area. Correct boundaries as needed, or identify in the text of section 110.4 how CKD and other processed waste will be isolated.	pnb	
19	Figure 105.4	<i>Previous comment - Map includes post mining reclamation treatments. This clutters up the map showing surface facilities. Please put these CAD layers on a separate map clearly defining what is to be reclaimed in the future.</i> New comment – All maps have been improved. A post mining reclamation treatments map is needed.	lah lah	

105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
20	Omission Figure 1051c	<i>From the Division's June 16, 2011, review - Please include a geologic map.</i> <i>Previous comment 2015 - Please color the portion of the map that applies to the mine, include portion of legend that applies to the mine.</i> New comment – The geology map is still difficult to read. The online “Utah Geological Survey map portal” has .tiff files that can be downloaded. The “Ogden quad” might work better. Or as an alternative expand the view of the information needed for the mine site.	lah	
21	All Cross sections	Slope angles on the cross sections need to be labeled; include maximum or minimum as appropriate.	lah	
22	Cross Sections	Give a figure number to match the rest of the figures, such as 105.*.*. Cross sections should have current topography and post mine topography. The Division recommends reducing the vertical exaggeration.	lah	
23	Cross section	Quarry #3 – Please check the labels on the cross section. As currently labeled it appears the pits will be backfilled, which is not consistent with 105.3b	lah	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
24	Cross section	One of the cross section pages is labeled in the title block as "Quarry #3," but the other cross section is labeled differently, i.e. without reference to any of the pits.	lah	
25	Cross section Omission	To support the request for variance and section 109.4, provide a detailed cross section(s) of the typical bench/slope angle/toe to crest angle for the different pits.	lah	

R647-4-106 - Operation Plan

General Operation Comments

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
26	General	Numerous times throughout section 106, the NOI refers to previous plans. Please copy appropriate information and include in the NOI. This needs to be a stand-alone document.	lah	

106.2 - Type of operations conducted, mining method, processing etc.

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
27	Page 10 Para 5	<i>Previous Comment - The small sandstone pit needs to be included in cross sections and post mining reclamation.</i> New Comment – Reference has now been made to the sandstone quarry, but it is not clear if it will be mined with 45-degree slopes. In addition the sandstone quarry needs to be addressed throughout the plan (i.e. cross sections and a reclamation plan are needed).	lah	
28	Page 12	Identify what comprises "Processed Waste" (e.g. CKD or other waste material).	pnb	
29	Page 12, Omission	<i>Previous comment 10 - Based on the chemical analysis provided, it appears that kiln dust should be classified as deleterious. Please modify this section of the NOI accordingly...</i> New comment - Not addressed. Identify the CKD as deleterious. "Deleterious materials" are defined in the Division's rules in R647-1-106 (Definitions).	pnb	
30	Page 12, Omission	<i>Previous Comment 11- Identify other deleterious materials (such as fuels and other chemicals) that are or will be present in significant amounts...</i> New comment - Not addressed. Identify the types of deleterious materials (e.g. fuels, lubricants, and other chemicals) that are or will be present. The Division considers volumes of tanks associated with equipment fueling and maintenance as significant.	pnb	

106.4 – Nature of materials to be mined or processed including waste; estimated annual tonnages

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
-----------	-------------------------------	----------	----------	------------------

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
31	106.4, Omission	<i>Previous comment 12 - Describe the nature of the cement kiln dust... Discuss briefly ... the significance of the results of testing reported in Appendix 2.</i> New comment - Partially addressed. The pH (over 12) and concentrations of a few notable metals should be stated to reflect the true nature of CKD. See comment 33.	pnb	

106.8 - Depth to groundwater, extent of overburden, geology

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
32	17	<i>Previous comment - Discuss in the text the elevation of the ground water in the water well and the proposed pit. Groundwater was noted during an inspection.</i> New comment - Please restate ground water in terms of elevation in feet (such as: the ground water table averages 52** feet plus or minus two feet). In addition, it is written that no exploration drill holes have intersected water. Please add elevational information, include the elevation depth of the drill holes (such as: no water was encountered in exploration drill holes with a final depth of 52** feet), the final pit floor elevation and refer to the different pits elevations.	lah	
33	106.4, Omission	<i>Previous comment 15 - Based on the results in Appendix 2 and general cement kiln dust characteristics, the Division currently considers these materials to be deleterious. ...Please provide the results of additional elemental and SPLP leach analyses...from statistically adequate samples of cement kiln dust that are representative of current and, if possible, future production. Include the same metals as previously analyzed, and add TDS to the list of SPLP analytes...</i> New comment - Not addressed. Given the pH and, to a lesser degree, a Geochemical Abundance Index analysis of the CKD, the Division considers CKD to be deleterious. Alternatively, CKD could be identified, handled, and disposed of as a deleterious material (which is defined differently than hazardous waste).	pnb	
34	18	<i>Previous comment - There is no discussion on the extent of the overburden or geology. Please add the geology from the 1987 reclamation plan into the current NOI. Refer to the geology map (which has yet to be submitted).</i> New comment - Thank you for submitting the geology map (see comment above). Please refer to this map in Section 106.8.	lah	

106.9 - Location & size of ore, waste, tailings, ponds

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
35	Pg 18 Para 3	The NOI says, "Holcim possesses a General Stormwater Permit issued by the State of Utah (UT-664)." The Division of Water Quality indicated in a telephone conversation that the site actually has two General Permits. Please reference both permits in this paragraph.	mpb	

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
36	Page 18 Last para	Typo – As written: “. . . (approximately 35 degrees vertical) . . .” Please fix the typo and delete the word “vertical.”	lah	
37	Page 17 para 6 & 7	<i>Previous comment 17 - Report... the maximum volume of cement kiln dust that would be stored in the active cement kiln dust stockpile area.</i> New comment - Not yet addressed. What is the capacity of the current CKD stockpiles and dump? Will this amount be adequate for the remaining mine life?	pnb	
38	Page 19 para 3	<i>Previous comment 18 - Indicate whether there is a liner under the kiln dust stockpile and dump.</i> New comment - Not fully addressed. Report where liners are present relative to both the new and old CKD disposal areas. Identify the liner types and thicknesses.	pnb	

R647-4-109 - Impact Assessment

109.1 - Impacts to surface & groundwater systems

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
39	Appendix 9	Please reference the second SWPPP that UDWQ stated Holcim has for this site.	mpb	

109.4 - Slope stability, erosion control, air quality, safety

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
40	Page 33	<i>Previous comment - The slope stability section needs to follow the recommendations in Appendix 8.</i> New comment – It is not necessary to copy the geotech report into the text of the NOI, but include a simple statement that “the operator will implement the recommendations of the geotech report in Appendix 8” and highlight in the NOI text the slope angles for the different pits (i.e. leave out methodology and stick to factor of safety (FOS), conclusions and recommendations).	lah	
41	Omission	Slope stability in the Sandstone Quarry has not been addressed. Also need to include cross section of the Sandstone Quarry.	lah	
42	Page 25 Para 2	Change first sentence to “...not anticipated to decrease slope stability below acceptable Factors of Safety” if that is the intent.	lah	
43	Page 25 Para 2	Fix typos in third sentence to “Waste material in the Bone Yard and Quarry Hollow is placed at *”; as 3H:1V is not angle of repose, so both can’t be true. The Division assumes the intent is to place material at a 3H:1V slope, as the fourth sentence notes “very stable”.	lah	
44	Page 25 Para 3	Not much actual information is noted in the paragraph regarding the slope stability of the waste dumps. It would be best to say that “Waste dumps will be end dumped at the angle of repose, then regraded during reclamation to less than 3H:1V” if this is the intent.	lah	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
45	Page 25 Para 4	Fix typo in sentence 6: "...a minimum factor of safety (1.0) will be maintained." The recommendations on page 27 note a FOS of 1.25, and in paragraph 4 the minimum FOS is noted to be 1.22.	lah	
46	Page 25 Para 4	Sentence 1 - Please provide typical cross section(s) for the proposed highwall configurations.	lah	
47	Page 27 Para 5	As all geology is not consistent, please repeat the second to the last sentence on Page 25, para 5	lah	

R647-4-110 - Reclamation Plan

110.2 - Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
48	Page 37 Para 1	<i>Previous comment - From the Division's June 16, 2011, review - Please show on reclamation maps the minor access road to be left.</i> New comment – Figure 105.3c has several minor roads labeled, but none are labeled as minor access road to be left. The Division recommends that the Legend be fixed on 105.3 c as comments are not part of the NOI. It is not clear if all the labeled roads are needed, specifically roads that don't access anything after reclamation is complete.	lah lah	
49	Page 29 Para 3	The Division recommends that the width of the crushed limestone main haul road be reduced, as there will be less long term maintenance for the radio towers and property owners.	lah	
50	Page 37 Para 2	<i>Previous comments - From the Division's June 16, 2011, review -The Division can't locate Exhibit 105.6 but can find Figure 105.6. Figure 105.6 is very generalized and needs more detail.</i> <i>Holcim comment notes "there is no Exhibit 105.6." On the list of figures the "Reclamation Treatment" map is noted as 105.6. This is a critical map. Please submit the reclamation treatment map.</i> New comment – Thank you for Figure 105.3c. More information needs to be presented on the figure, such as highwall areas and the highwall reclamation treatments, dump areas and the dump reclamation treatments and anticipated final contours.	lah lah	
51	Page 37 Para 5 & 6	<i>Previous comment - Show on reclamation map the benches that are proposed to be reclaimed and to be seeded.</i> <i>Holcim response - See figure 105.5c. No treatment is shown on map 105.5c, and the topographic contours do no match the geotech report.</i> New comment – Figure 105.3b notes all areas will be reseeded, but the Division understands the haul road will remain for access, with a limestone base rock. Please show on the map.	lah lah lah	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
52	Page 30, Waste Dumps	<i>Previous comment - Identify whether additional cement kiln dust waste dumps will be disposed of. Identify reclamation plans for any future kiln dust dumps. It isn't clear if the Stockpiles section applies to marketable kiln dust piles or not.</i> New comment - Possibly not yet addressed. See Section 110.4.	pnb	

110.3 - Description of facilities to be left (post mining use)

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
53	Page 39	<i>Previous comment - From the Division's June 16, 2011, review - As noted above, any road or pond to be left at the request of the private landowner needs to be documented and shown on the reclamation map.</i> <i>The comment from Holcim says to see Figure 109.1, but no private landowner's roads are shown on Figure 109.1</i> New comment – No further comment needed as roads are addressed under 110.2.	lah lah lah	

110.4 - Description or treatment/disposition of deleterious or acid forming material

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
54	Page 40	<i>Previous comment - From the Division's June 16, 2011, review - Bonding is based on worse case conditions; please list the maximum amount of deleterious materials.</i> <i>Also list fuels and other petroleum products used at the site.</i> New comments – As noted above, please provide bond sheets.	lah lah	
55	Page 31	<i>Previous comment 33 - Update this section to address both active (product) and any waste kiln dust piles, and refer to the Reclamation Treatments map to show the location of deleterious materials. How will kiln dust be "... safely removed from the site or left in an isolated or neutralized condition such that adverse environmental effects are eliminated or controlled" (R647-4-111.4)?</i> New comment - Not yet addressed. Explain of what "processed waste" consists (e.g. CKD), and whether it continues to be disposed of on a clay liner with an underlying French drain. Identify the cover thickness (past and future) over any deleterious material.	pnb	
56	Page 32	The proposed burying of demolition waste would be considered a landfill by the Department of Environmental Quality. After consulting with the Division of Waste Management and Radiation Control, this will require a Class III landfill permit under R315-304. See follow-up comment under R647-4-112, Surety.	mpb	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
57	Page 32	<i>Previous comment 34 - Identify plans for removal of other deleterious materials listed in section 106.2.</i> New comment - Not completely addressed. Identify removal and/or disposal plans for any deleterious materials that may not be recyclable or consumable (e.g. coal).	pnb	
58	Page 35	This page should probably be deleted from the NOI.	lah	

R647-4-112 - Variance

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
59	Page 37 para 1	As written "...would be submitted." Please change to "...would be submitted with the appropriate documentation justifying the proposed future request for variance."	lah	
60	Page 38	Paragraph 1 has several typos and should probably be deleted. Paragraph 2 should include the statement, "A geotechnical slope stability investigation has been completed and is attached as appendix 8 as justification for the request for variance."	lah	

R647-4-113 – Surety

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
61	Appendix 3	<i>Previous comment - From the Division's June 16, 2011, review - Please use the Division's spreadsheets to compute the reclamation cost estimate. The spreadsheets are available at the Division's webpage. Please provide the Summary sheet with the indirect costs from the Division's web page.</i> New comment - Please provide a printed copy of the spreadsheet for the electronic files on the Division's web site. <i>Previous comment - Add Total Acres to the Summary sheet</i> New comment - Please add the actual number of acres next to the line "Total Acres."	whw lah lah	
62	Reclamation cost estimate	The Division will have further comments about the reclamation cost estimate after receiving adequate responses to the comments in this review.	pbb	
63	Appendix 3	<i>Previous comment 40 - Add costs to remove or properly dispose of (such as to adequately cover) cement kiln dust stockpiles that may remain on-site after mining.</i> New comment - This comment will be evaluated when the reclamation cost estimate calculations are received.	pnb	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
64	Pg 32	Please include costs for removal and disposal of demolition debris at an approved existing off-site landfill. If the Division reclaims the site, it will not be responsible for a permitted landfill used for the disposal of demolition debris.	mpb	
65	Page 32, Paras 2 & 3	For calculation of the reclamation cost estimate, consumption during reclamation or recycling of fuels and lubricants is not considered. The Division must assume these materials will need to be properly disposed of offsite. Please include removal and disposal of fuels and lubricants in the cost estimate. This will require a quantified accounting of all fuels, lubricants and other hazardous or toxic chemicals in a table and/or on site plans.	mpb	

Appendix

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
66	Appendix 2 2015 Data	Identify the units of analyte concentrations in the 2015 CKD analysis.	pnb	
67	Appendix 2	Note: Water analyses discussed in the Holcim response to previous comment New 10 were not included.	pnb	
68	Appendix 2	Include the analytic results of any leach testing (e.g. SPLP), if performed.	pnb	
69	Appendix 8 Page viii	<i>Previous comment - From the Division's June 16, 2011, review- Executive summary needs to include recommendations by the designer of record with FOS.</i> <i>Several places in the report, including but not limited to page 1, para 4 ("specified by DOGM"); page 32, para 1("required"); page 60 #17 as per DOGM review, indicate the Division has "required a certain factor of safety." Rule 647 does not require any FOS, but the requesting of the variance requires justification for adequate stability. Please rewrite text to reflect rule.</i> New comment – A new appendix 8 was not submitted at this time.	lah	
70	Appendix 8 General Comment	<i>Previous comment - From the Division's June 16, 2011, review- Write report in all English units and not in part metric units. Use H to V.</i> <i>Please include the H to V in slope designations, such as on page 2: 1H:1V, 1H:1.37V, and 1H:1.5V. This comment applies to all of Appendix 8 and the document.</i> New comment – A new appendix 8 was not submitted at this time.	lah	
71	Appendix 8 Page 40	<i>Previous comment - From the Division's June 16, 2011, review- Figure 6 should be included in the NOI, showing maximum OA for each orientation of slope.</i> <i>Figure 1 should be added to the NOI.</i> New comment – A new appendix 8 was not submitted at this time.	lah lah	